

Amendments to the Drawings:

Applicants have concurrently filed a full set of replacement drawings in color to correct the informalities in the filed drawings due to presence of colors. Colors are desirable in these drawings to illustrate various features.

A petition to submit the color drawings is filed.

REMARKS

Examiner's detailed comments with references to disclosure of the cited prior art are acknowledged. Reconsideration and allowance of the application are respectfully requested.

Applicants have concurrently filed a full set of replacement drawings in color to correct the informalities in the filed drawings due to presence of colors. Colors are desirable in these drawings to illustrate various features. The Patent Office is authorized to charge the fee for submission of drawings in color to the Deposit Account 06-105. Therefore, the objections to the drawings should be withdrawn.

Non-elected claims 1-6, 8-15, 18, 21-25 and 28-31 are canceled.

Claims 7, 17, 19, 20, 26 and 27 also stand finally rejected under 35 USC §102(b) as allegedly being anticipated by a published PCT application no. WO 01/82335A2. Such rejections must be withdrawn for at least the following reasons.

1. Claims are distinctly patentable under 35 USC §102(b)

Claim 7 recites, among others, "using analytical expressions to compute local stresses in the line feature from a first contribution based on the local curvature information and a second, separate contribution based on the local temperature information wherein the analytical expressions include geometry information of the line feature, the dielectric layer, and the substrate, and material information of the line feature, the dielectric layer and the substrate." Hence, the local stresses in the line feature are computed using analytical expressions from both the recited first contribution and the recited second, separate contribution.

The Final Office Action changes the initial reasoning for rejecting Claim 7 with respect to the recited "second, separate contribution" and contends that the yield temperature relations in Eqs. (13), (14) and (16) on pages 37-38 of the cited reference disclose the second contribution as recited in Claim 7 (see, the bottom of page 7 of the Final Office Action). This statement is not supported by the disclosure of the cited reference and, in fact, contradicts the disclosure of the cited reference.

Referring to page 36 of the cited reference, the following description is provided:

*In addition to measuring the stresses caused by elastic changes, the system 100 shown in FIG. 1 may also be configured, based on the model in FIGS. 4A and 4B, to determine some plastic properties of line features formed on a substrate. Line features formed on a substrate may be subject to permanent and plastic deformation under certain thermomechanical treatments. In general, a line feature and the thin film experience elastic deformation when the temperatures are below threshold yield temperatures  $T_1^Y$  and  $T_f^Y$ , respectively. The curvatures of elastic deformation change linearly with the temperatures. When the temperatures are above the threshold yield temperatures  $T_1^Y$  and  $T_f^Y$ , however, plastic deformation occurs and the curvatures change with the temperatures in a nonlinear manner. For example, plastic deformation may occur in conductive lines when heated above the yield temperature during passivation. It is desirable to determine the stresses caused by such plastic deformation*

The cited reference further states that the ratio of the yield stresses of the line feature and the film can be determined from Equation (16).

Based on the cited reference, the yield temperature relations in Eqs. (13), (14) and (16) are for the non-linear,

plastic deformation and are used to compute the ratio of the yield stresses of the line feature and the film. Such yield temperature relations are not used to compute local stresses as recited in Claim 7. Nothing in the cited references discloses using analytical expressions to compute local stresses in the line feature from a first contribution based on the local curvature information using Eqs. (1) and (5)-(10) of the cited reference (see Final Office Action at page 4) and a second, separate contribution based on the local temperature information using yield temperature relations in Eqs. (13), (14) and (16) of the cited reference.

Contrary to the statement made in the Final Office Action, the Eqs. (1) and (5)-(10) of the cited reference are used to compute stresses within the linear deformation regime of the structure and thus are entirely different from the computing the ratio of the yield stresses of the line feature and the film based on Eqs. (13)-(16).

Therefore, the Final Office Action fails to provide a prima facie showing of anticipation under 35 USC 102(b). As such, the rejections must be withdrawn and Claim 7 is patentable.

Other claims so rejected are also patentable under 35 USC 102(b) based on the above arguments for Claim 7 and on their own merits.

## 2. Finality of the office action is improper

This office action is made final. Under MPEP 706.07, before final rejection is in order a clear issue should be developed between the examiner and applicants. Under 35 USC §102(b), such a clear issue is a prima facie showing by the Office Action.

In this case, the Final Office Action has failed to provide a prima facie showing and thus no clear issue has been developed. In this regard, the yield temperature relations in

Eqs. (13), (14) and (16) of the cited reference are for the non-linear, plastic deformation. The Final Office Action completely takes this part of the disclosure of the cited reference out of its context and incorrectly applies it to another technical feature in a different context (linear deformation). Therefore, the rejection stated in the Final Office Action completely lacks support of the cited reference and contradicts to the disclosure of the cited reference.

#### Conclusion

All pending claims are patentable and the application as amended is in a full condition for allowance.

Therefore, Applicants respectfully request the Patent Office to withdraw the finality of this office action.

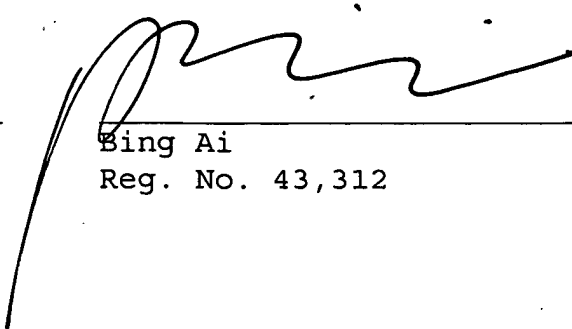
A notice of appeal is concurrently filed with this response to appeal to the Board of Patent Appeals and Interferences from the Final Office Action, finally rejecting Claims 7, 17, 19, 20 and 27. An appeal brief will be filed within two months.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Please apply the extension fee of \$525, and any other applicable charges or credits, to deposit account 06-1050.

Respectfully submitted,

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